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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,178	03/25/2004	Hiroshi Shingai	890050.476	7760

500 7590 01/02/2008

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EXAMINER	
VERDERAME, ANNA L	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,178	SHINGAI ET AL.	
	Examiner	Art Unit	
	Anna L. Verderame	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8,9,11,12,14,15 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8,9,11,12,14,15 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/15/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed by the applicant on 10/15/2007 has been carefully considered. A response is presented below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. 6,149,999 in view of Hosoda et al. '772, , Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589.

In example 7, Suzuki et al manufactures a phase-change optical recoding medium of the layer composition shown in figure 20. A first heat diffusion layer 7 comprising aluminum nitride was formed to a thickness of 50 nm on a substrate 1. A lower protection layer 2 comprising a film of a mixture of ZnS and SiO_2 was formed on the heat diffusion layer. An interface control layer 3 was formed on the lower protection layer. On the interface control layer 3 were formed a recording layer 4 comprising Sb-Te-Ge at a thickness of 25 nm and an upper protection layer 5 comprising a film of a mixture of ZnS and SiO_2 at a thickness of 20nm thereon, a reflection layer 6 comprising Al to a thickness of 100 nm and a UV-curable protection coat(24/1-25). 1,7-RLL modulation was used to record (24/27).

For recording and reproducing, light is shone through substrate 1. Shining light through the protective coating would not work due to the presence of a 100 nm thick metal reflective layer.

Suzuki et al does not teach the correct thicknesses for the first and second dielectric layers. Also, Suzuki et al does not teach the use of a reflective layer containing Ag as the primary component or the specific recording composition.

Hosoda et al. '772 teaches the manufacture of an optical recording medium comprising a reflective layer, a second dielectric layer, a phase change recording layer, a first dielectric layer, and a heat dissipative layer. The reflective layer consisting of an *Ag-Pd-Cu alloy*(claim 3) was formed on a polycarbonate substrate to a thickness of 100 nm. Then there was deposited ZnS-SiO_2 to thereby form the second dielectric layer having a film thickness of *6 nm*(claim 5). Next, there as deposited a quaternary alloy of Ge-In-Sb-Te to thereby obtain a phase change recording layer having a film thickness of 16 nm. Further, there was deposited ZnS-SiO_2 to form the first dielectric layer. In addition there was deposited ALN to thereby form a hardness enhancing layer having a thickness of 5 nm followed by the depositionZnS-SiO_2 identically with the first and second dielectric layer to form the protecting layer having a film thickness of 25 nm. Finally, a polycarbonate resin was adhered onto the first dielectric layer (0071). The examiner holds that the AIN layer, in this example, also acts as a heat dissipation layer. The phase change recording composition in this example does not contain Mn. However, the recording layer is not limited to GeSbTe(0049).

Hosoda et al. does not teach the specific recording compositions.

In examples 13-15, Harigaya et al. teaches an optical recording medium having a phase-change recording layer of $Ge_4Mn_7Sb_{70}Te_{19}$ and a silver reflection layer on the side of the recording layer opposite the light incidence plane(table 1 and (16/11-34)). These media were recorded at a linear velocity of 17.5 m/s(claim 8). Recording data were recorded by (8-16) modulation at a recording power of 19 mW, a bias(bottom) power of 0.1mW, and an erasing power of 6mW(16/50-55). P_e/P_w is equal to 0.315 which is in the ranges of 0.27 to 0.51, 0.26 to 0.47, and 0.26 to 0.51(claims 9, and 12, 15).

As noted by the applicant, the amendment of claims 1 and 17 to include the limitation that Mn be present in the amount of 11 to 20 atomic % effectively overcomes any arguments made regarding the recording composition based on the teachings of Harigaya et al. However, this reference will still be used for its teachings regarding the recording of data in optical recording medium having Ge-Mn-Sb-Te recording layers.

Ohno et al. teaches a phase change optical recording composition of $M_x(Sb_zTe_{1-z})_{1-w}$ where $0 \leq w \leq 0.2$, $0.5 \leq z \leq 0.9$, and M is at least one member selected from the group consisting of Ge and Mn among others(6/5-10). As a preferred example of the recording layer, an alloy having the composition $Mb_vMc_y(Sb_xTe_{1-x})_{1-v-y}$ where **Mb** is at least one member selected from the group consisting of **Ag** and Zn, **Mc** is **Ge** or Sn, $0.6 \leq x \leq 0.8$, $0.01 \leq y \leq 0.15$, $\mathbf{0.01 \leq v \leq 0.15}$, and $0.02 \leq v+y \leq 0.2$(7/1-6). In example 6 a recording layer having the specific composition $Ag_9Ge_6Sb_{67}Te_{18}$ is disclosed (31/50-61).

A recording film having the specific composition $\mathbf{Sb_{64}Te_{16}Ge_6Ag_{14}}$ can be formed according to the teachings of Ohno et al. as taught at (7/1-6) where x=0.8, y=.06,

v=0.14 and v+y=0.2. Also, as presented in the previous office action, a recording composition according to the formula found at (7/1-6) of Ohno et al in which M_b is Ag, M_c is Ge, v is 0.15, y is 0.05, x is 0.7275 and 1-x is 0.2725. This composition contains 5% Ge, 15% Ag, 58.2% Sb, and 21.89% Te.

Hirotsune et al. teaches recording films 13 and 17 as alternatives of $Ge_5Sb_2Te_8$ recording films. Recording films 13 and 17 are Ag-Ge-Sb-Te type and Cr-Ge-Sb-Te types. It was found tat Ag added to the recording films 13 and 17 was replaceable with a least one out of a group of elements including Mn while maintaining favorable overwrite characteristics(17/13-35). Replacing Ag with Mn is cost effective.

If, in the recording films having the specific composition **$Sb_{64}Te_{16}Ge_6Ag_{14}$ or $Sb_{58.2}Te_{21.89}Ge_5Ag_{15}$,** Ag is replaced with Mn then the resulting films having the composition **$Sb_{64}Te_{16}Ge_6Mn_{14}$ or $Sb_{58.2}Te_{21.89}Ge_5Mn_{15}$** have a composition that is nearly identical to that of working example 1 found in the applicant's disclosure at (0160).

In view of the teachings of Hirotsune that Ag in Ag-Sb-Te-Ge type recording films can be replaced with Mn while maintaining good overwrite characteristics, it would have been obvious to replace Ag with Mn in the Ag-Sb-Te-Ge recording compositions taught by Ohno et al. in order to maintain good overwrite characteristics while cutting costs.

It would have been obvious to one of ordinary skill in the art to modify the phase change optical recording medium taught by Suzuki et al. by forming the second dielectric layer to have a thickness in the range between 3 to 16 nm and to form the reflective layer of an alloy containing 90% or more Ag based on the optical recording

medium of Hosoda et al. which has an identical structure and also has a 6 nm thick second recording layer and a reflective layer made of an Ag-Cu-Pd alloy. Further it would have been obvious to use any one of the phase change recording compositions rendered obvious by the combination of Ohno et al 6,004,646 in view of Hirotsune et al 6,856,589 with the reasonable expectation of forming a useful and cost-effective optical recording medium .

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above, further in view of Ohkura et al. 2003/0152006, Yoshioka et al. Re. 36,383, and Ovshinsky 6,011,757.

Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346,Ohno et al.6,004,646 and Hirotsune et al. 6,856,589 as applied above do not teach dielectric layers having thicknesses in the range recited by the applicant in claim 4.

Ohkura et al. teaches an optical recording medium where the thickness of the first dielectric layer (disposed on the light incident side) has a thickness in the range from 20 to 250 nm (0072). The second dielectric layer preferably has a thickness of from 10 to 40 nm(0074).

Yoshioka et al. discloses that typically the active layer (phase-change recording layer) in an optical disk is sandwiched between dielectric layers which have excellent heat resistance characteristics. These dielectric layers serve to contain the active layer

and protect the substrate and an adhesive layer from undergoing changes in temperature during irradiation. Since the thermal behavior of the active layer both as to its ability to rapidly increase in temperature as well as its rapid cooling and slow cooling characteristics depend on the thermal conductivity of these dielectric layers. It is possible to optimize the recording and erasing characteristics by properly choosing the materials of the dielectric layer and by carefully controlling the thickness and composition of these layers(2/10-22).

Ovshinsky teaches that the thickness of the layers including the layers of the phase-change memory material are engineered to minimize energy necessary for effecting state-change as well as to optimize the high contrast ratio, high carrier to noise ratio and high stability of the optical phase change material(1/10-32).

With respect to the thickness of the first and second dielectric layers, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render the applicant's claims patentable in the absence of unexpected results. In re Aller 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the thicknesses of the first and second dielectric layers in order to effect the thermal behavior of the active layer as to its ability to rapidly increase in temperature as well as its rapid cooling and slow cooling characteristics as taught by Yoshioka et al. A prima facie case of obviousness may be rebutted, however where the results of optimizing a variable which is known to be result effective are unexpectedly good In re Boesch and Slaney, 205 USPQ 215.

It would have been obvious to modify the optical recording medium taught

by the combination of Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above by forming the first dielectric layer to have a thickness in the range of 20 to 40 nm and to form the second dielectric layer to have a thickness in the range of 10 to 16 nm based on the disclosure of Ohkura et al. at (0072) and (0074).

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above further in view of Hirai et al. 2002/0106476, Yoshioka et al. Re. 36,383, and Ovshinsky 6,011,757.

Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346 Ohno et al.6,004,646 and Hirotsune et al. 6,856,589 as applied above do not teach dielectric layers having thicknesses in the range recited by the applicant in claim 4.

Hirai et al. teaches a phase-change optical recording medium wherein the first and second dielectric layers each preferably have a thickness of 10 to 200 nm. The first and second dielectric layers preferably have a thickness of 30 to 150 nm and 10 to 100nm respectively(0051). Materials for the dielectric layers are taught at (0048). Phase-change recording materials are taught at (0040). Structure of the optical recording medium according to the invention of this application is taught in table 1 (0070).

Yoshioka et al. discloses that typically the active layer (phase-change recording layer) in an optical disk is sandwiched between dielectric layers which have excellent heat resistance characteristics. These dielectric layers serve to contain the active layer and protect the substrate and an adhesive layer from undergoing changes in temperature during irradiation. Since the thermal behavior of the active layer both as to its ability to rapidly increase in temperature as well as its rapid cooling and slow cooling characteristics depend on the thermal conductivity of these dielectric layers. It is possible to optimize the recording and erasing characteristics by properly choosing the materials of the dielectric layer and by carefully controlling the thickness and composition of these layers(2/10-22).

Ovshinsky teaches that the thickness of the layers including the layers of the phase-change memory material are engineered to minimize energy necessary for effecting state-change as well as to optimize the high contrast ratio, high carrier to noise ratio and high stability of the optical phase change material(1/10-32).

With respect to the thickness of the first and second dielectric layers, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render the applicant's claims patentable in the absence of unexpected results. In re Aller 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the thicknesses of the first and second dielectric layers in order to effect the thermal behavior of the active layer as to its ability to rapidly increase in temperature as well as its rapid cooling and slow cooling characteristics as taught by Yoshioka et al. A prima facie case of obviousness may be rebutted, however where the

results of optimizing a variable which is known to be result effective are unexpectedly good In re Boesch and Slaney, 205 USPQ 215.

It would have been obvious to one of ordinary skill in the art to modify the optical recording medium taught by Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above by forming the first dielectric layer to have a thickness of between 10 to 40 nm and to form the second dielectric layer to have a thickness in the range of 10 to 16 nm based on the disclosure of Hirai et al. 2002/0106476 at (0051).

5. Claims 8-9 12, 14-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above, further in view of Ando et al. 6,519,413.

The combination of Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above does not meet the limitation of having "data for setting recording conditions written therein".

Ando et al. teaches an optical recording medium shown in figure 13 containing a lead-in area 1002. In the embossed data zone of the lead-in area 1002 the following pieces of information have been recorded beforehand; information on recording, reproducing and erasing characteristics including the recording power, recording pulse-width, erasing power, and linear velocity in recording and erasing(16/49-61). The invention of this application is applicable to phase-change optical recording

medium(16/23-24). The lead-in area also contains a trial recording area(for checking the recording and erasing conditions) (16/66-17/2). Apparatus is also taught at (1/5-15) and (17/5-7).

In regard to claims 8-9, 12, 14-15, and 17 the limitation that ID data is "written therein" is met by the teaching in Ando et al. that the data is "embossed" into the medium.

It would have been obvious to one of ordinary skill in the art to modify the optical recording medium taught by the combination of Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as applied above by having the ID data including the recording power, recording pulse-width, erasing power, and linear velocity in recording and erasing written therein based on the teachings of Ando et al. Further, it would have been obvious to have the specific linear velocity written there in to be in the range of between 14 m/s to 21 m/s or 14 m/s to 33 m/s based on the example of Harigaya et al. at (16/50-55), the ratio of P_e/P_w written therein to be in the range of between 0.26 to 0.47 based on the example of Harigaya et al. at (16/50-55) and have the recording pulse sequence written therein be 1,7-RLL modulation(same used by applicant) based on the disclosure of Suzuki et al. at 24/27) with the reasonable expectation of success in recording/erasing/reproducing the medium.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno

et al. 6,004,646 and Hirotsune et al. 6,856,589, further in view of Ando et al. 6,519,413 as applied above, and further in view of Nakamura et al. 2003/0043712.

The combination of Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589, further in view of Ando et al. 6,519,413 does not teach the limitation of claim 11 which recites a linear recording velocity equal to or higher than 21 m/sec and lower than 33 m/sec written into the optical recording medium.

Nakamura et al. teaches a phase change optical recording medium capable of being read/written/erased at multiple recording velocities ranging from 4.8m/sec to 30 m/sec(abstract). Compositions for the phase-change recording layer consisting of Ag, In, Sb, Te, and Ge is taught at (0058).

This reference also pertains to recording compositions of Mn, In, Sb, Te, and Ge, in view of the teachings of Hirotsune et al. cited above which discussed the replacement of Ag with Mn.

It would have been obvious to one of ordinary skill in the art to modify the optical recording medium taught by the combination of Suzuki et al. 6,149,999 in view of Hosoda et al. 2003/0118772, Harigaya et al. 6,770,346, Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589, further in view of Ando et al. 6,519,413 as applied above by having the linear velocity written therein be within the range of 17m/s to 30m/s based on the teachings found in Nakamura et al.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-5 and 7-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim1-16 of copending Application No. 10/824,081 Although the conflicting claims are not identical, they are not patentably distinct from each other because: This rejection can be found in the first office action mailed on 11/17/2006.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

This rejection can be found at paragraph 13 of the non-final office action mailed on 11/17/2006.

Conclusion

Response to Arguments

9. Rejections under 35 U.S.C. §103(a):

Applicant argues that the teachings of Harigaya et al. teach away from the applicant's invention as presented in amended claims 1 and 17. This argument is correct. The teachings of Harigaya et al. are now used solely for their general teachings of recording conditions useful for Ge-Sb-Te-Mn recording layers. Harigaya et al. teaches Mn in the amount of 1-10%. Applicant teaches Mn as low as 11%. Certainly there is overlap in the recording conditions acceptable for a recording layer containing 10% Mn and one having Mn in the amount of 11%.

The teachings of Ohno et al. 6,004,646 and Hirotsune et al. 6,856,589 as presented above teach a recording layer composition which meets the limitations presented in amended claims 1 and 17. The reasoning for this can be found in paragraph 2 above and may also be found in the office action mailed on 07/13/2007.

10. Obviousness-type double patenting rejections:

Examiner notes applicants request to file a terminal disclaimer in event that the claims of the above applied copending applications are patented during the prosecution of this application, or in alternative to cancel claims in copending applications in the event that the claims of this application are patented. However, neither have the claims of the copending applications been patented nor are the claims of the instant application

in condition for allowance. Therefore the obviousness-type double patenting rejection stands.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna L. Verderame whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ALV ALV

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